

**Commonwealth of Kentucky  
Division for Air Quality**

**PERMIT APPLICATION SUMMARY FORM**

Completed by: Martha M. Allman

GENERAL INFORMATION:

Name:	TVA - Paradise Fossil Plant
Address:	13246 State Route 176, Suite 10 Drakesboro, KY 42337-2345
Date application received:	4/9/2007
SIC Code/SIC description:	4911, Electric Services (fossil fuel power generation)
Source ID:	21-177-00006
Source A.I. #:	3239
Activity ID:	APE20070001
Permit:	V-07-018

APPLICATION TYPE/PERMIT ACTIVITY:

<input checked="" type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
___ Administrative	<input checked="" type="checkbox"/> Title V
___ Minor	<input type="checkbox"/> Synthetic minor
___ Significant	<input checked="" type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

- ☒ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☐ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☐ Certified by responsible official
- ☐ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

**EMISSIONS SUMMARY:**

Pollutant	Actual (tpy)	Potential (tpy)
PM/PM <sub>10</sub>	2995/4262	5453/9908
SO <sub>2</sub>	83925 <sup>See note</sup>	121219
NOx	35276	95638
CO	1746	2541
VOC	384	639

Note: "Actual" is based upon actual emissions without full year of scrubber, whereas "Potential" reflects scrubber operation.

**SOURCE DESCRIPTION:**

On April 9, 2007, Tennessee Valley Authority (TVA) submitted an update to the Title V Permit application for its Paradise Fossil Plant (PAF) originally submitted in May 1996. The update was provided to address objections made by the EPA to the proposed permit, V-04-024, initially issued on December 29, 2004. TVA requested that this permit be withdrawn on June 23, 2006. To address EPA objections, TVA has agreed to reduce the current Unit 3 limit of 5.4 lbs SO<sub>2</sub>/MMBtu to 1.2 lbs SO<sub>2</sub>/MMBtu, effective when the unit is scrubbed and discharging flue gas through Emission Point 78, the new scrubber stack. The new Unit 3 scrubber is a single module unit and was constructed with by-pass capabilities to the original Unit 3 stack. When Unit 3 is not scrubbed, the emission limit will be 3.1 lbs SO<sub>2</sub>/MMBtu, effective when discharging flue gas through the existing Unit 3 stack.

TVA addressed another EPA objection by removing from the application two lime storage silos (formerly EQPT15, renumbered as Emission Units 53-54) as these are decommissioned and will not be returned to service. TVA further agreed to additional monitoring requirements for hours of operation and limestone throughput for the Unit 3 Limestone Handling system (formerly GACT 10, renumbered as Emission Units 75 and 76).

In addition the facility has provided updates and subsequent permitted modifications that were either missed in the original Title V application but surfaced from their latest auditing. The updates include new activities associated with the addition of the Coal Processing system, updated forms for the addition of the Selective Catalytic Reduction (SCR) units on each heat exchanger, the Unit 3 Limestone Handling system, updates to the Unit 3 section of the application to address the new scrubber, and the addition of the Coal Fines Recovery Process. These units were constructed under 401 KAR 51:017, Section 22 (7/14/04)

**EMISSIONS AND OPERATING CAPS DESCRIPTIONS:**

1. Coal processed through Emission Units 22, 23, 25-31, 35, 39, and 40 shall not exceed 13,000,000 tons per any 12 consecutive months.
2. Total emissions of particulate matter from the Coal Washing Plant (Emission Units 22, 23, 25-31, and 35) shall not equal or exceed 100 lb/hour, 1000 lbs/day, and 50 tons/year. [401 KAR 51:050, Section 3, Permit No. O-87-012]
3. To preclude applicability of 401 KAR 51:017, particulate matter emissions from limestone handling, Emission Units 41-52, shall not exceed 25 tons in any 12 consecutive months. . [Permit No. O-87-012]
4. Emission Units 53 and 54 are decommissioned and shall not be operated.

5. Emission Units 75 and 76 are limited to 900 tons/hour and 600 tons/hour respectively.
6. To preclude applicability of 401 KAR 51:017, coal fines processed through Emission Units 79-84 shall not exceed 750,000 tons per any 12 consecutive months.
7. Pursuant to 401 KAR 63:020, the source shall not combust wood treated with arsenic (CCA) or other metals as preservatives.
8. Bypass of the Emission Unit 3 scrubber shall be limited to 720 hours in any 12-consecutive months.